

# COMPARISON OF ENVIRONMENTAL BALANCE OF PLANKTONS AT THE EARLY DRY SEASON AND THE EARLY RAIN SEASON IN TWO EMBUNGS

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## ABSTRACT

### Abstract:

This study aims to compare the environmental balance in terms of plankton species composition, primary productivity, plankton abundance, plankton diversity index, plankton dominance index, and plankton saprobic index in Embung Potorono and Embung Imogiri at the beginning of the dry season and the beginning of the rainy season. This research was conducted in April 2021-July 2022. The type and design of this research is a descriptive exploratory research method using observation. Sampling was carried out at 5 stations (4 stations on the edge and 1 station in the middle) and each station was repeated 5 times. Furthermore, measurements of the physical and chemical conditions of the waters in the Potorono and Imogiri Embungs were carried out. Based on the results of the study, the composition of plankton species at the beginning of the rainy season in the Potorono Embung contained 67 species and in the Imogiri Embung there were 45 species. Meanwhile, at the beginning of the dry season, 70 species were found in the Potorono Embung and 45 species were found in the Imogiri Embung. The value of primary productivity at the beginning of the dry season at Potorono Embung was 70.830 (Mesotrophic) and at Imogiri Embung was 48.050 (Oligotrophic). Primary productivity value at the beginning of the rainy season in Potorono Embung is 63.350 (Mesotrophic) and in Imogiri Embung is 25.065 (Oligotrophic). The value of plankton abundance at the beginning of the dry season at the Potorono Embung was 731,092.04 Individuals/Liter and at Imogiri Embung was 464,270.69 Individuals/Liter. At the beginning of the rainy season the value of plankton abundance in the Potorono Embung was 150,232.89 Individuals/Liter and in the Imogiri Embung it was 290,932.93 Individuals/Liter.

The index value of plankton diversity at the beginning of the dry season at Potorono Embung was 2,698 (moderate) and at Imogiri Embung was 2,545 (moderate). At the beginning of the rainy season the diversity index value in Potorono Embung was 2.999 (moderate) and in Imogiri Embung was 2.674 (moderate). The dominance index value at the beginning of the rainy season in Potorono Embung was 0.073 (low) and in Imogiri Embung with a value of 0.586 (moderate). At the beginning of the dry season the dominance index value at Potorono Embung was 0.078 (low) and at Imogiri Embung was 0.1413 (low). The saprobic index value at the beginning of the dry season at Potorono Embung was 0.510 ( $\beta$ -Mesosaprobic) and at Imogiri Embung it was 0.398 ( $\beta/\alpha$  - Mesosaprobic). At the beginning of the rainy season the saprobic index in Potorono Embung was 0.340 ( $\beta/\alpha$  - Mesosaprobic) and in Imogiri Embung was 0.584 ( $\beta$ -Mesosaprobic).

Kata Kunci: *Embung, Plankton, Season, Water Quality*